

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE  
BEFORE THE BOARD OF APPEALS

APPLICANT: GROLLITSCH, Helmut, et al

SERIAL NO.: 10/672,402

ART UNIT: 3653

FILED: September 29, 2003

EXAMINER: Hageman, M.

TITLE: METHOD AND APPARATUS FOR DETECTING A CRACKED OR BROKEN CASE

APPLICANT'S BRIEF IN SUPPORT OF APPEAL

Commissioner for Patents  
P. O. Box 1450  
Alexandria, VA 22313-1450

Sir:

This is an appeal from the Final Rejection of Claims 39-42 and 44-51.

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CERTIFICATE OF MAILING UNDER 37 CFR 1.8(a)

Commissioner for Patents  
P. O. Box 1450  
Alexandria, VA 22313-1450

Sir:

I hereby certify that the attached correspondence comprising:

APPEAL BRIEF

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Alexandria, VA 22313-1450

on September 4, 2007.

Respectfully submitted,

September 4, 2007

Date

Customer No. 24106

/Andrew W. Chu/

John S. Egbert  
Reg. No. 30,627  
Andrew. W. Chu  
Reg. No. 46,625  
Egbert Law Offices  
412 Main St., 7<sup>th</sup> Floor  
Houston, Texas 77002  
(713) 224-8080  
(713) 223-4873 fax

## TABLE OF CONTENTS

	<u>Page</u>
Real Party in Interest .....	1
Related Appeals and Interferences .....	1
Status of Claims .....	1
Status of Amendments .....	2
Summary of Claimed Subject Matter .....	2
Grounds of Rejection to be Reviewed on Appeal .....	4
Argument .....	5
I.    OVERVIEW .....	5
II.   THE INVENTION IS NOT ANTICIPATED BY THE PRIOR ART .....	5
A.   THE INVENTION IS NOT ANTICIPATED BY THE '170 PATENT .....	6
B.   THE PROPER VERSION OF THE METHOD CLAIM WAS NOT CONSIDERED AGAINST THE '170 PATENT .....	7
III.  THE INVENTION IS NOT MADE OBVIOUS BY THE PRIOR ART COMBINATION .....	7
IV.  SUMMARY .....	11
Claims Appendix (Claims 39-42 and 44-51) .....	13
Evidence Appendix .....	17
Related Proceedings Appendix .....	18

### REAL PARTY IN INTEREST

The persons named in the caption, Mr. Helmut GROLLISTCH and Mr. Burkhard LICKFETT, are the inventors only. The Assignee, UNITECH, Inc. is the real party in interest in the present appeal.

### RELATED APPEALS AND INTERFERENCES

There are no other related appeals or interferences known to Applicant which will directly affect or be directly affected by or have a bearing on the Board's decision in the present appeal.

### STATUS OF CLAIMS

Originally, Claims 1 - 21 were filed in this case as an original filing of a non-provisional application on September 29, 2003.

After the first Office Action of July 7, 2006, Applicant amended the claims to place the application into a condition for allowance over the cited prior art. It was indicated that Claims 9 and 21 were allowable if rewritten in independent format. Claims 1-21 were canceled, and the subject matter was re-presented as Claims 22-38. The independent Claims 22 and 32, corresponding to Claims 9 and 21, incorporated several of the original claims and presented in independent format.

After another Office Action on November 13, 2006, Applicant made further amendments to the claims in response to prior art combinations of old prior art. Claims 22-38 were canceled, and the subject matter in allowable form was re-presented as Claims 39-51.

A Final Action was finally received on April 4, 2007. The Final Action included rejections similar to the previous Office Action. It is important to note that the rejections were based upon prior art that was available and considered since the first Office Action on July 7, 2006. In response, Applicant filed the present appeal and submitted a concurrent amendment to place Claims 39-42 and

44-51 into a condition for appeal. Claims 39-42 and 44-51 are the pending claims at issue in the present appeal. Claim 43 was canceled to reduce the number of issues on appeal.

Claims 1-38 and 43 are currently rejected and canceled.

Claims 39-42 and 44-51 are the claims at issue in the present appeal.

#### STATUS OF AMENDMENTS

An amendment has been concurrently filed on September 4, 2007 with the present Appeal Brief, subsequent to the Final Rejection of April 4, 2007. The amendment corrects a typographical error in Claim 46, which is relevant to the condition for appeal and cancels Claim 43 to reduce the number of issues on appeal from three to two.

#### SUMMARY OF CLAIMED SUBJECT MATTER

The present invention relates to devices for determining the quality of a container or case. More particularly, the present invention relates to the inspection of cases that can contain a plurality of fluid containers therein. Additionally, the present invention relates to a quality control apparatus which utilizes deflection techniques to determine the existence of a cracked or broken condition in the object being controlled.

The first independent claim (Claim 39) is an apparatus for detecting a cracked or broken case. A frame (See Paragraph [0038], ll. 2-4, 7-9, Paragraph [0039], ll. 2-5, Paragraph [0040], ll. 3-5, reference numerals 90, 92, 94, 96 and 98 in Figures 2-4) has a conveyor means mounted thereon for moving the case along the frame. A first ram means is affixed to the frame for applying a force onto a surface of a wall of the case. A second ram means is affixed to the frame and positioned in a different location on the frame from the first ram means. The second ram means applies a force onto another surface of the case. There is a sensor means cooperative with each ram means. The sensor

means detects when the surface of the wall of the case has deflected beyond a desired amount. The apparatus further includes an ejection means affixed to the frame and cooperative with the sensor means for ejecting the case directly from the conveyor means when the wall of the case has deflected beyond the desired amount.

The "means + function" terms of the present invention are described in detail and identified as follows:

Claim	term	specification and drawings
39	conveyor means	Figures 1 and 2, reference numeral 16; specification, Paragraphs [0016] ll. 2,6; [0019] ll. 5, 7-8; [0033] ll.1-4; [0034] ll. 5-8.
39	first ram means	Figures 1, 2 and 4, reference numeral 22; specification, Paragraphs [0016] ll. 2-4; [0017] ll. 2-3; [0029] ll.1-2; [0030] l. 6; [0031] l. 1; [0038] ll. 6-7.
39	second ram means	Figure 1, reference numeral 26; specification, Paragraphs [0016] ll. 7-8; [0018] ll. 1-7; [0029] l.2; [0035] ll. 1-5.
39	sensor means	Figure 1, reference numeral 32; specification, Paragraphs [0016] ll. 3-5; [0029] ll. 4-5; [0031] ll.20-21.
39	ejection means	Figures 1, 3 and 4, reference numeral 38; specification, Paragraphs [0016] ll. 5-7; [0032] ll. 1-4; [0039] ll.1-3.
42	sensor means	Figures 1 and 2, reference numerals 52, 56; specification, Paragraphs [0017] ll. 6-8; [0022] ll. 7-8; [0031] ll.6-8, 13-15.
44	positioning means	Figure 1, reference numeral 82; specification, Paragraphs [0019] ll. 5-6; [0022] ll. 2-4; [0037] ll.12-13; [0039] ll. 3-4.
45	separating means	specification, Paragraphs [0019] ll. 6-8; [0029] ll. 7-8; [0039] ll.5-6.

Additional references to secondary structures of the ram means and the ejection means are contained throughout the specification, including a brief description of the structures in the summary section of the specification.

The second independent claim (Claim 51) is the method claim for use of the apparatus for detecting a cracked or broken case in the first independent claim (See Paragraphs [0020]- [0022]). The method of detecting a cracked or broken case includes forming a frame having a conveyor thereon (See Paragraph [0038], 11.2-3, reference numeral 16 in Figure 2). A plurality of cases is placed on the conveyor (See Paragraph [0028], 11.4-7, Paragraph [0029], ll. 5-6, reference numerals 12 and 14 in Figure 1) and moved in a direction on the conveyor (See Paragraph [0030], 11.1-2, Paragraph [0033], ll. 1-4). A position of one case of the plurality of cases on the conveyor is fixed (See Paragraph [0029], 11.3-5, Paragraph [0030], ll. 2-4, Paragraph [0034], ll. 1-3, reference numerals 32 and 40 in Figure 2), and a force is applied against a wall of the one case such that the wall deflects (See Paragraph [0030], 11.5-7, Paragraph [0031], ll. 12-13, reference numeral 44 in Figure 1, reference numeral 56 in Figure 2). A determination whether the deflection is beyond a desired amount is made (See Paragraph [0030], 11.6-9, Paragraph [0031], ll. 13-15), and the one case is ejected directly from the conveyor, (See Paragraph [0030], 11.1-2, Paragraph [0031], ll. 13-15, Paragraph [0032], ll. 1-4, reference numeral 38 in Figure 2) if the deflection is beyond the desired amount.

**GROUND OF REJECTION  
TO BE REVIEWED ON APPEAL**

In the Final Office Action of April 7, 2007, it was indicated that Claims 39 - 42, and 44-45 were rejected under 35 U.S.C. § 102(b) as anticipated by European Patent No. 0043170 (the '170 patent) in view of British Patent No. 2,052,765 (the '765 patent). Claim 43 was rejected under 35 U.S.C. 103(a) as being unpatentable over European Patent No. 0043170 in view of British Patent No. 2,052,765 further in view of U.S. Patent No. 5,528,925 (the '925 patent). Claims 46-51 were

rejected under 35 U.S.C. § 102(b) as being anticipated by European Patent No. 0043170.

## ARGUMENT

### **I. OVERVIEW**

Claims 39-42 and 44-51 have previously been amended to place the claims into a condition for allowance. Claim 43 was canceled to reduce the number of issues on appeal from three issues to two issues.

In particular, independent apparatus Claim 39 now recites limitations regarding subject matter of original Claims 1-4, 8, 9, and 10 and the ejection means. Independent method Claim 46 now recites the limitations regarding subject matter of original Claims 13, 17, 19, and 21 and the ejection step. Applicant has consistently amended the claims as suggested by the Examiner for allowance throughout the prosecution of this application. Allowable subject matter was indicated from the first Office Action on July 7, 2006, almost three (3) years after initial filing. It is acknowledged that new prior art can be introduced to affect the allowability of claims, but it is difficult to accept the present Final rejections based upon prior art that was available and considered from the first Office Action. It is difficult to explain to an Applicant how subject matter in Claims 9 and 21 are allowable over the prior art in one instance and not allowable months later.

Importantly, a typographical error in the presentation of Claim 46 may have resulted in the unfortunate circumstances of final rejection of subject matter that had previously been allowed.

### **II. THE INVENTION IS NOT ANTICIPATED BY THE PRIOR ART**

Claim 46 includes the subject matter of original Claims 13, 17, 19 and 21 and the additional



step of ejecting. The step of ejecting was recited in order to avoid an obviousness rejection based upon the '170 patent and the Huang patent in a previous Office Action. The original subject matter of Claims 13, 17, and 21 were previously determined to be allowable subject matter over the '170 patent in two previous Office Actions. Applicant respectfully contends that Claims 46-51 of the present invention are still patentable over the '170 patent. Furthermore, Claims 46-51 include further limitations that further distinguish the present invention from the single '170 patent.

**A. THE INVENTION IS NOT ANTICIPATED BY THE '170 PATENT**

Although the '170 describes a process that is reminiscent of the present invention, the '170 fails to disclose inventive elements of the present invention. The '170 patent fails to anticipate the placement of the case on the conveyor in the orientation as described and lacks the step provided for the ejection of the crate from the conveyor once the crate fails the testing. If the crate that is being tested in the '170 patent fails the test, then the crate is simply replaced with an acceptable crate. There is no disclosure nor teaching nor suggestion of the automatic ejection of the defective crate from the conveyor as claimed in the present invention. Furthermore, the crates on the conveyor are not placed so that open sides face the conveyor. This orientation is a particular benefit for the present invention for crates that have not yet been filled and for examination of the bottom surface of the crate.

The first Examiner on July 7, 2006 recognized that the '170 patent did not anticipate the present invention and indicated that the allowable subject matter was available. The subsequent Examiner of November 13, 2006 also recognized the failings of the '170 patent because another prior art reference was required in order to make an obviousness rejection for a combination. The '170

patent alone does not anticipate the present invention as indicated throughout the examination of the present invention.

**B. THE PROPER VERSION OF THE METHOD CLAIM WAS NOT CONSIDERED AGAINST THE '170 PATENT**

A typographical error occurred between the preparation of Claim 46 from Claims 32 and 37 in the amendment of January 15, 2007. The originally allowed subject matter of Claim 21 was inadvertently omitted from Claim 46. Applicant has now concurrently amended Claim 46 such that the proper limitations are now contained in the current version of Claim 46. No new subject matter has been added by these amendments because the subject matter was originally presented as Claim 21. Applicant maintained the intention to incorporate all suggested claims from the very beginning of the prosecution on the merits.

As such, Applicant respectfully contends that Claims 46-51 are no longer anticipated by the '170 patent. The additional ejection step and the orientation limitation are not disclosed by this prior art reference. These limitations are now properly recited in the current Claim 46. These claims should be allowed as previously indicated throughout the prosecution of the application.

**III. THE INVENTION IS NOT MADE OBVIOUS BY THE PRIOR ART COMBINATION**

Independent Claim 39 recites the "ejection means" which is cooperative with the sensor means for ejecting the case "directly" from said conveyor means when the wall of the case has deflected beyond the desired amount. The "ejection means" is defined as a ram having a cylinder affixed to the frame with a piston extending outwardly therefrom. The piston is movable between

a first position away from the case on the conveyor and a second position which urges against the case so as to separate the case from the conveyor means. Apparatus Claim 39 incorporates the subject matter of original Claims 1-4, 8, 9 and 10 in addition to the ejection means. The subject matter of original Claim 9 was previously indicated as allowable subject matter.

The Final Rejection of Claim 39 is based upon the combination of the '170 patent and the '765 patent. These references were previously considered from the first Office Action of July 7, 2006, and the subject matter of Claim 9 was determined to be allowable. The present combination of these references does not change the allowability of original Claim 9, such that presently pending independent Claim 39 should be allowable, along with corresponding dependent Claims 40-42 and 44-45.

Independent Claim 39 now emphasizes the "ejecting" feature of the present invention. The importance of this ejection feature was recited in the original specification. In particular, one of the "objects" of the present invention is defined in paragraph [0011] as:

It is another object of the present invention to provide a method and an apparatus whereby a broken case can be removed from a feedstream of cases.

In view of the system of the present invention, it is possible to carry out inspection, detection and ejection in a relatively rapid manner and a continuous process. As was stated in paragraph [0037] of the original specification:

The present invention is able to carry out the inspection, detection and ejection of the particular cases in a relatively rapid manner. It is believed that the test can be properly carried out within 0.5 seconds. As a result, there will not be a great deal of a backup along the conveyor 16.

Applicant respectfully contends that these features serve to effectively distinguish the present

invention from the prior art combination.

This independent claim was finally rejected based upon the combination of '170 patent and the '765 patent. The '765 does describe a device for determining the strength of plastic crates, including a system utilizing a conveyor onto which a plurality of cases are placed. This British '765 patent describes a sampling processes whereby one of several cases can be discharged from the conveyor onto a separate table for inspection. A hydraulic ram is positioned adjacent to the conveyor for discharging the conveyor for inspection. On the table, various inspection processes are carried out with respect to plastic crate. If the plastic crate passes the inspection process, then a ram is used for the placing the crate back onto the conveyor. If the crate should fail the inspection, then another ram is used so as to discharge the crate from the table.

The British '765 patent does not disclose a continuous process on a single conveyor. It isolates a sample from the continuous flow of cases. As such, it does not provide for 100% inspection of the crates on the conveyor belt. The ram will eject the case for testing from the conveyor in contrast to ejecting the case directly from the conveyor if it fails the test. Relative to independent Claim 39, Applicant respectfully contends that there is no "ejection means" affixed to the frame of the conveyor for "ejecting the case directly from the conveyor means when the wall of the case has deflected beyond the desired amount". There is no ram that has a piston movable to a second position for "urging against the case on the conveyor means so as to separate the case from the conveyor means". As such, the '765 patent fails to achieve the efficiency of the present invention by carrying out the testing directly on the conveyor and then ejecting a defective crate directly from the conveyor during the moving and processing of the crates on the conveyor. The '765 patent describes a rather complex process with complex mechanisms used for the testing of a sample of the

crates on the conveyor. As such, the '765 patent is not able to achieve the 100% inspection capability of the present invention.

The '170 patent has been cited from the beginning of the prosecution of the present application, showing an apparatus and method to select damaged crates from a number of crates in a continuous process on a single conveyor.

However, the subject matter of Claim 9 was allowed on July 7, 2006, and no amendments have been entered to change such a conclusion. The '170 patent and the '765 were both considered two previous times, and the mere combination of these previously used prior art references does not further suggest the allowed limitations of Claim 9. Applicant is only interested in the allowed subject matter that was originally indicated. Applicant is willing accept such limitations, as originally and consistently indicated throughout the prosecution of this application.

The particular element is the "piston having a curved surface positioned at an end of said piston opposite said cylinder" in Claim 39. The Examiner has relied upon the '170 patent at reference numeral 31 in Figure 2 and the specification at page 6, lines 4+.

Applicant respectfully contends that the '170 patent does not make the curved surface and piston orientation of the present invention obvious. Numeral 31 is written to refer to the "wall 31" of the crate. The wall of the crate has no relation to the piston nor the orientation of the piston. Most likely, the correct numeral is "punch 29 with rounded top 30". The "rounded top 30" is a disclosure of a curved surface. However, the orientation of the piston is still lacking. The subject matter of Claim 9 is still allowable.

The '170 patent teaches against the piston of the present invention. The punch 29 of the '170 patent is mounted above the crate with an open side facing upwards. The punch 29 is a lifting

mechanism with a tong and orthogonal cylinder powering the clamping action. Such an arrangement would not make common sense for the present invention. The lifting and displacement are not physically possible because there are no flaps. The punch 29 of the prior art references do not make the above-mounted second ram means possible. As such, as previously recognized, the '170 patent does not disclose the subject matter of original Claim 9, and the combination with the '765 patent does not change the failure of these references to teach anything about the particular arrangement and testing method of the present invention as claimed.

On the basis of the reasons stated herein, Applicant respectfully contends that the present invention is patentably distinguishable from the '170 patent and '765 patent combination.

#### **IV. SUMMARY**

Based upon the foregoing analysis, it is Applicants' contention that Claims 39-42 and 44-51 of the present invention are patentably distinguishable from the prior art and the prior art combinations.

The foregoing Brief is intended to assist the Board of Appeals in examining the application and, in the course of explanation, may employ shortened or more specific or variant descriptions of some of the claim language. Such descriptions are not intended to limit the scope of the claims; the actual claim language should be considered in each case. Furthermore, the remarks are not considered to be exhaustive of the facets of the invention which render it patentable, being only examples of certain advantageous features and differences which Applicants' attorney chooses to mention at this time. The required fee for transmittal of the appeal brief is enclosed herewith.

Reconsideration of the application, as amended, and allowance hereof are respectfully requested.

Respectfully submitted,

September 4, 2007

/Andrew W. Chu/

Date

John S. Egbert

Reg. No. 30,627

Andrew W. Chu

Reg. No. 46,625

Customer No. 24106

Egbert Law Offices

412 Main St., 7<sup>th</sup> Floor

Houston, Texas 77002

(713) 224-8080

(713) 223-4873 fax

## CLAIMS APPENDIX

39. An apparatus for detecting a cracked or broken case comprising:

a frame;

a conveyor means mounted on said frame, said conveyor means for moving the case along said frame;

a first ram means affixed to said frame, said first ram means for applying a force onto a surface of a wall of the case;

a second ram means affixed to said frame and positioned in a different location on said frame from said first ram means, said second ram means for applying a force onto another surface of the case, said second ram means comprising a pneumatic ram having a cylinder affixed to said frame and a piston extending outwardly of said cylinder, said piston being movable between a first position and a second position relative to said cylinder, said first position positioning said piston away from said another surface of the case, said second position urging against said another surface of the case, said piston having a curved surface positioned at an end of said piston opposite said cylinder;

a sensor means cooperative with said ram means, said sensor means for detecting when the surface of the wall of the case has deflected beyond a desired amount; and

an ejection means affixed to said frame and cooperative with said sensor means for ejecting the case directly from said conveyor means when the wall of the case has deflected beyond the desired amount, said ejection means comprising:

a ram having a cylinder affixed to said frame, said pneumatic ram having a piston extending outwardly therefrom, said piston being movable between a first position and a



second position relative to said cylinder, said first position causing said piston to be positioned away from the case on said conveyor means, said second position urging against the case on said conveyor means so as to separate the case from said conveyor means.

40. The apparatus of Claim 39, said first ram means comprising:

a pneumatic ram having a cylinder affixed to said frame, said pneumatic ram having a piston extending outwardly therefrom; and

an arm pivotally connected to said piston and pivotally connected to said frame.

41. The apparatus of Claim 40, said piston being movable between a first position and a second position relative to said cylinder, said first position causing said arm to be positioned away from the wall of the case, said second position urging the wall of the case outwardly.

42. The apparatus of Claim 41, further comprising:

a sensor means connected to said cylinder and cooperative with said piston, said sensor means for determining when said second position is beyond a desired limit of movement.

44. The apparatus of Claim 39, further comprising:

a positioning means affixed to said frame, said positioning means for fixing a position of the case relative to said frame.

45. The apparatus of Claim 44, further comprising:

a separating means affixed to said frame in spaced relation to said positioning means, said separating means for spacing another case from the case on the conveyor means when said positioning means fixed the position of the case.

46. A method of detecting a cracked or broken case comprising:

forming a frame having a conveyor thereon;

placing a plurality of cases on said conveyor, each of said plurality of cases having an open side and a closed side with a plurality of walls extending therebetween and being placed on said conveyor such that an open side thereof faces said conveyor;

moving said plurality of cases in a direction on said conveyor;

fixing a position of one of said plurality of cases on said conveyor;

applying a force against one of said plurality of walls such that the wall deflects;

determining whether the deflection is beyond a desired amount; and

ejecting the case directly from said conveyor when the deflection of the wall is beyond the desired amount.

47. The method of Claim 46, said step of applying the force comprising:

positioning a surface of a ram against the wall of the case; and

actuating said ram such that said surface of said ram urges against the wall of the case.

48. The method of Claim 47, said step of determining comprising:

sensing an amount of movement of said surface of said ram.

49. The method of Claim 48, said ram having a pneumatic cylinder mounted in a fixed position, said ram having a piston extending outwardly of said cylinder, said ram having an arm pivotally connected to said piston, said step of actuating the ram comprising:

retracting said piston within said cylinder such that said arm pivots outwardly, said arm having said surface thereon urging against the wall.

50. The method of Claim 46, said step of fixing the position comprising:

actuating a pneumatic ram such that a piston of the ram extends through said open

side and abuts one of said plurality of walls so as to stop a movement of the case relative to said conveyor.

51. The method of Claim 46, further comprising:

applying another force against said closed side of said case, such that said closed side deflects; and

determining whether the deflection of said closed side is beyond a predetermined limit.

## EVIDENCE APPENDIX

None.

RELATED PROCEEDINGS APPENDIX

None.